



Published in final edited form as:

*J Child Adolesc Subst Abuse*. 2010 November 1; 19(5): 406–423. doi:10.1080/1067828X.2010.515882.

## Self-Cognitions, Risk Factors for Alcohol Problems, and Drinking in Preadolescent Urban Youth

Colleen Corte and Laura Szalacha

University of Illinois at Chicago

### Abstract

We examined relationships between self-structure and known precursors for alcohol problems in 9–12 year old primarily Black and Latino youth ( $N=79$ ). Parental alcohol problems and being female predicted few positive and many negative self-cognitions and a future-oriented self-cognition related to alcohol (“drinking possible self”). Nineteen percent of the sample reported ever drinking, but 40% of those with a “drinking possible self” reported ever drinking. Compared never drinkers, youth who reported ever drinking had fewer self-cognitions. The self-structure may be an important mechanism through which parental alcohol problems and antisocial behavior lead to early alcohol use, and a viable target of interventions aimed at preventing early alcohol use.

### Keywords

theoretical model; schema model of the self-concept; adolescents; risk behavior

---

Adolescent alcohol use is a significant public health problem, particularly among economically disadvantaged children and adolescents (Fothergill & Ensminger, 2006; Kost & Smyth, 2002; Poulton et al., 2002). Youth who start drinking before age 15 are four times more likely to develop alcohol dependence later in life than those who begin drinking at or after age 15 (Grant & Dawson, 1997). In spite of existing prevention efforts, however, underage drinking rates remain unacceptably high (National Institute on Alcohol Abuse and Alcoholism, 2008). This has led to renewed calls to explicate the determinants of early alcohol use and acceleration to alcohol problems that take adolescent development into consideration (U.S. Department of Health and Human Services, 2007).

Our previous research suggests that characteristics of the total collection of identities may be an important and modifiable determinant of early alcohol use and the acceleration to alcohol problems. While much of the existing self and identity literature is focused on the *process of identity development*, e.g., exploration and commitment as mechanisms of resolving identity crises (see Schwartz, 2001 for a review), our work is focused on the *cognitive products of identity development*, i.e., memory structures called self-schemas (Markus, 1977; Markus & Wurf, 1987) that influence information processing (Hoyle, 2006; Kendzierski, 1988; Markus, 1977; Stein & Corte, 2007) and behavioral regulation (Corte, 2007; Estabrooks & Courneya, 1997; Froming, Nasby, & McManus, 1998; Kendzierski & Whitaker, 1997; Stein, Roeser, & Markus, 1998; Stein & Corte, 2007). We found that young adults with early onset alcohol dependence were distinguished from social drinkers in that they had fewer positive and more negative self-schemas and a self-schema related to drinking (Corte & Stein, 2007). Because these young adults already had alcohol dependence, however, it is not clear whether this

configuration of self-cognitions was a contributor to or a consequence of alcohol dependence. In a secondary analysis of data from adolescent participants in a high-risk family study for alcoholism, we found that in the subset of adolescents who reported drinking and getting drunk, having few positive and many negative self-schemas in early adolescence (12–14 years) distinguished earlier from later onset of drinking and getting drunk respectively (Corte & Stein, 2008). A self-schema related to drinking was not measured in this study.

The purpose of this study is to extend our previous findings to a younger and more ethnically diverse community-based sample. More specifically, we examined relationships among 1) the total collection of identities including the number of positive and negative self-schemas and a future-oriented conception of the self related to drinking, 2) known precursors for alcohol problems (antisocial behavior and parental alcohol problems), and 3) ever drinking in 9–12 year old primarily Black and Latino urban youth, with attention paid to potential gender differences in these relationships. Because identities are modifiable (Jacobs, Bleeker, & Constantino, 2003), they may be viable targets of interventions aimed at preventing early alcohol use and the acceleration to alcohol problems.

### Schema Model of Self-Concept

From a social cognitive theory perspective, identities are cognitive products of development. An adolescent's developmental experiences, which themselves are shaped by a variety of environmental, cultural, and biological factors, lead to the formation of cognitive memory structures in specific content domains that are referred to as self-schemas (Andersen & Chen, 2002; Campbell, Assanand, & DiPauls, 2000; Markus & Wurf, 1987; Sedikides & Skowronski, 1997) as well as future-oriented conceptions of the self called possible selves (Markus & Nurius, 1987; Oyserman & Fryberg, 2006).

**Self-Schemas**—Self-schemas are complex and chronically accessible cognitive structures about the self that are stored in long-term memory (Lieberman, Jarcho, & Satpute, 2004; Macrae, Moran, Heatherton, Banfield, & Kelley, 2004). They consist of abstract knowledge about the self in a particular domain (e.g., athletic), memories of specific behavioral episodes in the domain (e.g., getting first basket while playing on basketball team), and action-based behavioral rules and strategies that enable efficient behavior and the ability to manipulate complex information (e.g., completing a series of complex moves on the basketball court (Markus & Wurf, 1987). Because self-schemas include both non-conscious rules for drawing inferences about the self as well as behavioral strategies and routines, they enhance processing of self-relevant information and serve as strong internal regulators of affect and behavior. Affect and behavior, however, depend in part on the valence of the individual self-schemas. Positive self-schemas generate positive affect and motivate behavior in the domain (Cross & Markus, 1994; Estabrooks & Courneya, 1997; Froming et al., 1998; Kendzierski, 1988; Kendzierski & Whitaker, 1997) whereas negative self-schemas generate negative affect and are associated with behavioral inhibition (Andersen & Cyranowski, 1994; Andersen & Cyranowski, 1995; Lips, 2004; Markus, Hamill, & Sentis, 1987). Having few positive and many negative self-schemas is a general cognitive vulnerability that has been shown to be associated with high levels of negative affect (Corte & Stein, 2007; Stein & Corte, 2007).

**Possible selves**—Possible selves are future-oriented conceptions of the self that one expects to be, wishes to be, or fears being in the future (Markus & Ruvolo, 1989; Oyserman, Bybee, Terry, & Hart-Johnson, 2004; Oyserman & James, in press; Pizzolato, 2006). Because they include vivid action-oriented images not only of an outcome but also of strategies required to achieve that outcome, possible selves play a powerful role in behavior (King & Raspin, 2004; King & Smith, 2004; Oyserman & James, in press). Because a major developmental task of adolescence is to construct the self one wants to become (Markus & Ruvolo, 1989; Oyserman

et al., 2004), the content and salience of possible selves influences their behavioral choices. Of particular relevance for the proposed study is that possible selves have been shown to predict a cluster of risky behaviors (Freeman, Hennessy, & Marzullo, 2001; Stein et al., 1998) in youth and binge drinking in college students (Quinlan, Jaccard, & Blanton, 2006). Moreover, in a study of youth across the transition from 8<sup>th</sup> to 9<sup>th</sup> grades, Stein found that an 8<sup>th</sup> grade ‘popular’ possible self predicted a cluster of risky behaviors in the 9<sup>th</sup> grade, and that engaging in risky behaviors in the 8<sup>th</sup> grade predicted formation of a deviant self-schema in the 9<sup>th</sup> grade (Stein et al., 1998). These findings suggest that domain-specific possible selves play a critical role in the early enactment of risky behaviors, and that the risky behaviors feed back to the developing self-concept.

## Overview of Present Study

In this exploratory study, we examined relationships among self-cognitions (number of positive and negative self-schemas and availability in memory of a ‘drinking possible self’), antisocial behavior, parental alcohol problems, gender, and ever drinking in 79 low-income, predominantly Black or Latino, preadolescent school-recruited youth who had not yet begun regular drinking.

## METHODS

### Participants

Participants were 9–12 year old youth ( $N = 79$ ) recruited from 2 low-income public schools and 3 low-income summer youth programs in Chicago. Their average age was 10.7 ( $SD = 1.1$ ) years. Fifty-four percent ( $n = 43$ ) of the youth were female. Most were Black (53%;  $n = 42$ ) or Latino (39%;  $n = 31$ ); 5% ( $n = 4$ ) were Multiracial and <3% ( $n = 2$ ) were White. Eligibility criteria included: age 9–12, English speaking, attendance at one of five recruitment sites, parental permission, and cognitively able to provide assent and complete study measures.

Brief descriptions of the study were made in school classrooms, study descriptions were mailed to parents of 9–12 year old youth, and flyers were posted at the summer youth program centers. While youth had to be English speakers to participate, our parental permission forms were in Spanish for those youth who had Spanish-only speaking parents. The PI (CC) or research assistant met briefly (individually) with youth for whom we received signed parental permission forms in order to describe the study and obtain child assent. Of 82 youth who received parental permission, 79 provided assent, 2 children declined to participate and one child was cognitively unable to provide assent.

### Measures

**Number of Positive and Negative Self-Schemas**—Items endorsed as “Really True for Me” on the Harter Self-Perception Profile for Children (Harter, 1985) were used to identify self-schemas. The measure consists of 30 items that tap children’s perceptions of themselves in domains known to be important in youth—scholastic competence, social acceptance, athletic competence, physical appearance, and behavioral conduct (global self-worth items were not included in the computation of self-schemas). Each item is written as a statement describing two types of children—one with high competence (positive) and one with low competence (negative) in a specific content domain, e.g., “some kids have lots of friends,” BUT “other kids don’t have many friends.” For each item, children first decide which side of the statement best describes them (e.g., the positive or the negative pole) and then they decide if the statement is “really true for me” or “sort of true for me.” Because self-schemas reflect domains about which the person feels confident and certain, only items rated as “really true for me” were considered self-schemas. Valence of the self-schema (positive or negative) was determined based on whether the positive or negative pole of the item was endorsed. The total number of positive

and negative self-schemas was computed separately by adding the total number of positive items and the total number of negative items endorsed as “really true for me” in domains the adolescent feels are important.

Although the measure does not account for perceived importance of the domains to the self, the Harter items reflect culturally salient and important domains for adolescents in Western cultures. Furthermore, a recent study of adolescents shows that taking into account the perceived importance of domains does not improve predictive power of specific domains to general self-worth (Shapka & Keating, 2005). As such, Roeser and colleagues (Roeser et al., 2008) argue that relying on importance ratings is too stringent a requirement for definition of identities in adolescent populations. We have used this method of determining the number of positive and negative self-schemas in a previous study of adolescents across two waves of data that were 3 years apart (Corte & Stein, 2008). In that study, we found that positive and negative self-schemas as measured by the Harter measure were correlated in expected directions with global self-esteem in early and mid-adolescence respectively: [Positive self-schemas:  $r_{s(264)} = .68, .30$ ; Negative self-schemas:  $r_{s(264)} = -.36, -.33$ ] and depressive symptoms in early and mid-adolescence respectively: [Positive self-schemas:  $r_{s(264)} = -.16, -.09$ , Negative self-schemas:  $r_{s(264)} = .13, .19$ ] providing evidence of construct validity. Three year stability was satisfactory for the measure as an indicator of the number of positive,  $r_{(264)} = .43$  and negative self-schemas,  $r_{(264)} = .35$ ).

**Drinking Possible Self**—Availability in memory of a ‘drinking possible self’ was measured with a 5-point Likert scale item from a closed-ended questionnaire used to measure domains of the adolescent self (Stein et al., 1998). The item, “*Drink Alcohol is Likely to Describe Me NEXT YEAR*” (0=‘not at all’ to 4 ‘very much’) is embedded among other items, e.g., likelihood of being a *good student*, being *popular*, *using drugs*. Any affirmative response (1 = a little to 4 = very much) suggests availability in memory of a ‘drinking possible self,’ whereas a negative response (0 = not at all) suggests no ‘drinking possible self.’ Evidence of construct validity of the item as an indicator of a ‘drinking possible self’ comes from a longitudinal study of 8<sup>th</sup> grade girls who reported some drinking ( $N=60$ ). Availability of a ‘drinking possible self’ in the 8<sup>th</sup> grade predicted alcohol misuse in the 9<sup>th</sup> grade, even controlling for 8<sup>th</sup> grade alcohol misuse,  $R^2=.46, p<.001$  (Corte & Stein, 2005). In addition, likelihood ratings have been successfully used to measure possible selves in a variety of domains, e.g., popularity, conventionality, deviancy (Stein et al., 1998) and academics (Kemmelmeier & Oyserman, 2001). Evidence of discriminant validity comes from other pilot work (Corte, 2007) we conducted in a sample of 39 predominantly minority youth aged 9–13 who completed the ‘drinking possible self’ measure and measures of depressive symptoms, oppositional defiant behavior, and alcohol expectancies. The ‘drinking possible self’ was not associated with depressive symptoms  $r_{(39)} = .04$ , opposition/defiance  $r_{(39)} = .16$ , or alcohol expectancies: positive social expectancy  $r_{(39)} = .13$ , wild and crazy expectancy  $r_{(39)} = .12$ , and sedated-impaired expectancy  $r_{(39)} = -.08$ . The ‘drinking possible self’ was moderately and inversely associated with negative arousal expectancy, however,  $r_{(39)} = -.29, p=.07$ , suggesting that youth who have a belief about themselves in terms of drinking too much in the future tend not to believe that they will experience negative feelings (e.g., feeling sad, mad, or scared) or behaviors (e.g., acting cocky, dangerous, rude, nasty, or mean, or hurting others) as a result of drinking. The same pattern of correlations between the ‘drinking possible self’ and alcohol expectancies was also found in a larger sample ( $N = 115$ ) of college students using different measures of both ‘drinking possible self’ and alcohol expectancies (Hicks, 2007). These correlations support the notion that a ‘drinking possible self’ is distinct from alcohol expectancies. Further evidence of construct and discriminant validity comes from recent studies of college student samples that have shown that the ‘drinking possible self’ predicts alcohol use over and above attitudes, expectancies and intentions.

**Antisocial Behavior**—The degree of antisocial behavior was measured using the *Antisocial Behavior Checklist for Youth (ASB)* (Zucker, & Fitzgerald, 1996). This 63-item questionnaire measures the frequency of a child's participation in a variety of aggressive and antisocial activities. We omitted 13 items that were age-inappropriate for our sample (e.g., lied to your spouse, changed jobs more than 3 times in one year). The items on the ASB questionnaire include overt forms of aggression such as “cursed at your parents to their face” and more covert forms of aggression like “lying to your teacher” which may better reflect antisociality in girls. This measure is currently being used in adolescents from an ongoing study of familial risk for alcoholism (Zucker, Fitzgerald, Refior, Puttler, Pallas, & Ellis, 2000). Expected negative correlations with positive behavioral conduct were found in adolescent participants of the longitudinal family study of risk for alcoholism both in early adolescence,  $r_{(264)} = -.31$ , and three years later in mid-adolescence,  $r_{(264)} = -.42$  providing evidence of construct validity. In the same sample of adolescents, 3-year stability of measure was  $r_{(264)} = .62$ . Cronbach's alpha was = .89.

**Parental Alcohol Problems**—Parental alcohol problems were assessed using the short-form of the *Children of Alcoholics Screening Test (CAST-6)* (Hodgins, MatickaTyndale, ElGuebaly, & West, 1993). This six-item (yes/no) questionnaire asks about worries and concerns about a parents' alcohol use (e.g., “have you ever heard your parents fight when one of them was drunk?”, “did you ever feel like hiding or emptying one of your parent's bottles of liquor?”, “did you ever wish that one of your parents would stop drinking?”). The CAST-6 is a widely used and well-validated screening tool to identify children who live with an alcoholic parent. A cutoff score of  $\geq 3$  positive responses has been shown to be a reliable indicator of parental alcohol problems (Hodgins et al., 1993). Significant correlations between child and parent reports of parental drinking in 3<sup>rd</sup>–6<sup>th</sup> graders have been shown (Smith, Miller, Kroll, Simmons, & Gallen, 1999). In addition, a one-year test-retest reliability of .78 has been documented in a sample of 6<sup>th</sup> graders (Havey & Dodd, 1995). Cronbach's alpha was = .86.

**Alcohol Use**—The *Alcohol Use & Misuse Scale* (Shope, Copeland, & Dielman, 1994) was used to measure ever drinking more than a few sips of alcohol. Because it may be difficult for children to understand the concept of what constitutes an alcoholic drink, separate questions were asked for beer, wine, and hard liquor or any other drink with alcohol in it (Shope et al., 1994). Because of the age of our sample, however, we did not expect many youth to be regular drinkers or to have alcohol misuse symptoms (trouble with parents, police or peers due to alcohol). For any youth who did report drinking, we distinguished “illicit” drinking from drinking with parental permission (e.g., as part of a religious ceremony or on a holiday) by asking questions about context. Participants were reminded that their answers were confidential before the measure was administered. Studies have shown that adolescent's self-reports of substance use are valid when compared to biochemical indicators (Wills & Cleary, 1997) and even with the utilization of a bogus pipeline procedure in which students are faced with the prospect of independent biochemical verification of self-reports of substance use (Campanelli, Dielman, & Shope, 1987). Other studies also support test-retest reliability of self-reported alcohol use in adolescents over 30, 60, 90 days, and past year (Levy et al., 2004).

## Procedures

Data collection occurred at the school or summer youth program. Each child met individually with the PI or Research Assistant in a quiet room. After child assent was obtained, all measures were administered in interview format. Data collection took approximately 30–40 minutes. Each child was compensated for their participation with a \$10 gift card to a local merchant (e.g., bookstore, sporting goods store, movie theatre).

## Data Analysis

Bivariate correlations were estimated to examine relationships between the number of positive and negative self-schemas, presence/absence of a 'drinking possible self,' and known precursors for alcohol problems -- antisociality (*ASB-Youth* sum score) and parental alcohol problems (*CAST-6* sum score). Multiple regression models were fit to examine the relative predictive ability of parental alcohol problems, antisociality, and gender on the number of positive self-schemas and the number of negative self-schemas. We fit a logistic regression model with the same variables to predict presence/absence of a 'drinking possible self.' Finally, to determine whether self-cognitions differed for youth who reported ever drinking versus those who did not, t-tests and contingency table analyses were used. Additional correlations and contingency table analyses were completed on data from 28 youth who completed a one-year follow-up.

## RESULTS

### Descriptive Statistics

Across the entire sample, antisociality ranged from no antisocial behaviors to 24 antisocial behaviors (See Table 1). Similarly, there was a full range from 0 to 6 yes responses on the 6-item Children of Alcoholics Screening Test (*CAST-6*). The self-concepts of youth were characterized by many more positive than negative self-schemas. Consistent with a previous study of 8<sup>th</sup> graders (Corte & Stein, 2005), approximately one in five youth showed evidence of a 'drinking possible self' available in memory. None of the youth were regular drinkers (at least one drink per month for six months), but nearly one in five reported that they had consumed more than a few sips of alcohol. Among those who reported ever drinking, the average age of a child at his/her first drink was 10.0 ( $SD=1.9$ ) and 80% (12 of 15) did so with parental awareness, e.g., at a holiday or family celebration.

### Relationships between Self-Cognitions and Known Precursors for Alcohol Problems

Pearson correlation coefficients are shown in Table 2 for the three self-cognitions (number of positive self-schemas, number of negative self-schemas and availability in memory of a 'drinking possible self') and two known precursors for alcohol problems (parental alcohol problems and antisociality). Parental alcohol problems were significantly associated with all three self-cognitions; few positive self-schemas, many negative self-schemas and a 'drinking possible self' were associated with high *Children of Alcoholics Screening Test* scores. Antisociality was only associated with one self-cognition--having a 'drinking possible self' available in memory.

### Known Precursors of Alcohol Problems as Predictors of Self-Cognitions

To examine the combined influence of known precursors for alcohol problems on the number of positive and negative self-schemas, we fit two regression models with parental alcohol problems (*CAST-6* score), antisociality (*ASB-Youth* score) and gender as predictors. In the first analysis, high *CAST-6* scores ( $\beta = -.43$ ) and being female ( $\beta = -.28$ ) predicted fewer positive self-schemas,  $R^2 = .22$ ,  $F_{(3,75)}=6.9$ ,  $p<.001$ . Antisociality was not a significant predictor of the number of positive self-schemas. The same predictors were used to predict the number of negative self-schemas. High *CAST-6* scores ( $\beta = .44$ ) and being female ( $\beta = .28$ ) significantly predicted more negative self-schemas,  $R^2 = .22$ ,  $F_{(3,75)}=6.9$ ,  $p<.001$ . Antisociality was not a significant predictor of the number of negative self-schemas. Because our previous work demonstrated that having *both few positive and many negative self-schemas* was a cognitive liability for negative affect and risk behavior (Corte & Stein, 2007; Stein & Corte, 2008), we also fit a model with a composite score reflecting the overall valence of the self (number of positive self-schemas minus the number of negative self-schemas) as the dependent

variable; high scores reflected a greater proportion of positive self-schemas, and presumably, a healthier self-concept. Once again, high CAST-6 scores ( $\beta = -.48$ ) and being female ( $\beta = -.31$ ) significantly predicted a lower proportion of positive self-schemas (lower composite score),  $R^2 = .27$ ,  $F_{(3,75)} = 9.0$ ,  $p < .001$ . Antisociality was not a significant predictor of the composite self score.

Subsequently, we fit a logistic regression model to the data using the same variables to predict the 'drinking possible self' (0=no, 1=yes). Both known precursors of alcohol problems were significant predictors  $\chi^2(3, N=79) = 9.0$ ,  $p = .03$ . Each yes response on the *Children of Alcoholics Screening Test* increased the odds of having a 'drinking possible self' by 32% (OR=1.32,  $p = .05$ ), and each point on the *Antisocial Behavior Checklist* increased the odds of having a 'drinking possible self' by 12% (OR=1.12,  $p = .05$ ). Gender was not a significant predictor of the 'drinking possible self.'

### Differences in Self-Cognitions by Drinking Status

There were no differences in the number of positive self-schemas for those who reported ever drinking ( $M = 12.0$ ,  $SD = 6.6$ ) compared to those who reported never drinking ( $M = 13.4$ ,  $SD = 6.9$ ),  $t_{(77)} < 1$ . There was a non-significant trend for those who reported ever drinking to have fewer negative self-schemas ( $M = 3.2$ ,  $SD = 3.8$ ) compared to those who reported never drinking ( $M = 5.6$ ,  $SD = 4.5$ ),  $t_{(77)} = 1.92$ ,  $p = .06$ . When looking at the total number of self-schemas (positive and negative combined) – an indicator of the degree of certainty about one's self-definition -- those youth who reported ever drinking had significantly fewer overall self-schemas ( $M = 15.2$ ,  $SD = 5.7$ ) compared to those who reported never drinking ( $M = 19.0$ ,  $SD = 5.2$ ),  $t_{(77)} = 2.46$ ,  $p < .02$ . There were significant differences in whether or not drinking occurred depending upon the availability in memory of a 'drinking possible self,'  $\chi^2(1, N=79) = 5.3$ ,  $p = .02$ . Although only 19% of the sample (15 of 79) reported ever drinking, among those youth who had a 'drinking possible self' available in memory, 40% reported ever drinking. Only 14% of those without a 'drinking possible self' (9 of 64) reported ever drinking.

### Additional Analyses on Subset of Sample One Year Later

We were able to locate 28 youth from the original sample for a one-year follow-up. This subsample was comprised of 61% ( $n=17$ ) boys and 39% ( $n=11$ ) girls. Most were Latino (50%;  $n=14$ ) or Black (43%;  $n=12$ ). Mean age was 11.9 years. The same procedures and measures that were completed at baseline were completed at the one-year follow-up. There were no differences in any of the self-cognition variables in these 28 youth compared to the 79 youth in the original sample. In the follow-up sample, 25% ( $n=7$ ) had a 'drinking possible self' available in memory and 36% ( $n=10$ ) reported ever drinking (though only 3 of the 10 reported doing so outside parental awareness).

We examined cross-sectional (at one-year follow-up) and longitudinal bivariate relationships among self-cognitions, known precursors for alcohol problems and ever drinking. At the one-year follow-up, the 'drinking possible self' remained positively associated with parental alcohol problems,  $r_{(28)} = .33$ ,  $p = .08$  and was much more strongly associated with antisocial behavior,  $r_{(28)} = .59$ ,  $p = .001$ . In addition, there continued to be significant differences in whether or not drinking occurred depending upon the availability in memory of a 'drinking possible self,'  $\chi^2(1, N=79) = 5.2$ ,  $p = .02$ . Although 36% of the sample (10 of 28) reported ever drinking at the one-year follow-up, among those youth who had a 'drinking possible self' available in memory, 71% (5 of 7) reported ever drinking. Only 24% of those without a 'drinking possible self' (5 of 21) reported ever drinking.

In longitudinal analyses, only one marginally significant difference was found. Although 25% (7 of 28) of the youth had a 'drinking possible self' at the one-year follow-up, 44% (4 of 9) of

those who reported ever drinking at baseline had a 'drinking possible self' one year later and only 16% of nondrinkers at baseline had a 'drinking possible self' one year later,  $\chi^2(1, N=28) = 2.7, p = .10$ . Positive and negative self-schemas remained associated with known precursors but not with drinking.

Stability coefficients over the one-year time frame were high for the *Children of Alcoholics Screening Test* sum score ( $r = .67$ ), *Antisocial Behavior Checklist-Youth* sum score ( $r = .75$ ), number of positive self-schemas ( $r = .66$ ), number of negative self-schemas ( $r = .69$ ) and ever drinking ( $\Phi = .77$ ). The stability coefficient for the 'drinking possible self,' an emerging and therefore less well developed cognition, was lower ( $\Phi = .24$ ). Of the 28 youth, 20 (71%) were consistent in their reports of a 'drinking possible self' (yes-yes or no-no) over the one year time period, 4 (14% of the sample) did not report a 'drinking possible self' at baseline and did report one at one year follow-up, and only 4 (14% of the sample) who reported a 'drinking possible self' at baseline did not report one at follow-up.

## DISCUSSION

In this study, we examined relationships among the total array of self-cognitions (number of positive and negative self-schemas), including availability in memory of a future-oriented conception of the self related to drinking ('drinking possible self'), and two known precursors for alcohol problems (antisocial behavior and parental alcohol problems) in preadolescent youth *prior to the onset of regular alcohol use*. This study was a first attempt to determine whether self-cognitions, which are powerful proximal predictors of behavior, are related to known precursors for alcohol problems and *prior to regular alcohol use*.

From our theoretical perspective, self-cognitions may be an important proximal risk factor that mediates the effects of parental alcohol problems and antisocial behavior on early alcohol use. As such, we anticipated significant relationships between self-cognitions and both parental alcohol problems and antisocial behavior. Parental alcohol problems were modestly but significantly associated with few positive self-schemas, many negative self-schemas and availability in memory of a 'drinking possible self.' We theorize that the chaos of an alcoholic home may provide insufficient opportunities for exploration of the environment necessary to develop positive self-schemas (Eccles, Barber, 1999). In addition, the modeling of alcohol in the home may be conducive to the formation of a 'drinking possible self.' Zucker and colleagues (Zucker, Kincaid, Fitzgerald, & Bingham, 1995) found that 3–6 year old children of alcoholic fathers correctly identified more alcoholic beverages and attributed more alcoholic beverage use to male adults than children of nonalcoholics, suggesting the availability of a rudimentary alcohol-related cognition in children of preschool age. Although this alcohol-related cognition was not a *self-cognition*, it is certainly plausible that over time, children of alcoholics may develop a future-oriented cognition about themselves in relation to alcohol, i.e., a 'drinking possible self.' Antisocial behavior, was moderately positively associated with availability in memory of a 'drinking possible self,' but was not associated with positive or negative self-schemas. Because youth with conduct problems and antisocial behavior are likely to have a family history of alcohol problems (American Psychiatric Association (4th Ed.), 2000; Clark, Cornelius, Kirisci, & Tarter, 2005), and are at high risk for developing alcohol problems themselves (American Psychiatric Association (4th Ed.), 2000; Clark et al., 2005) they may have a 'possible self' related to alcohol articulated in memory at a very young age.

We found that girls and children who report more parental alcohol problems have both fewer positive and more negative self-cognitions. This is important given our previous studies with older adolescents (Corte & Stein, 2008), college students (Stein & Corte, 2008), and young adults (Corte & Stein, 2007; Stein & Corte, 2007) that have shown that such a self-concept configuration is associated with high levels of negative affect. In the presence of other factors,



such as a 'drinking possible self,' the turn to alcohol may be one way of escaping the discomfort associated with high levels of affect. We also found that both of the known precursors for alcohol problems were associated with increased odds of having a 'drinking possible self' available in memory. As noted earlier, modeling of heavy alcohol use by parents may contribute to the development of rudimentary cognitions about oneself vis a vis drinking. The fact that antisocial behavior predicted the 'drinking possible self' is not surprising given that alcohol use in youth is one expression of antisocial behavior. A child with high levels of antisocial behavior may consider drinking to be consistent with the way they see themselves in the future.

While the majority of the sample had not yet begun drinking (and most had never had even a sip of alcohol), we took an exploratory look at differences in self-cognitions and known precursors for alcohol problems for those who had reported ever drinking versus those who had not (the majority of whom did so with parental awareness). Although there were no statistically significant differences in the number of positive or negative self-schemas for youth who reported ever drinking compared to youth who did not, those youth who reported ever drinking had fewer *overall* self-schemas compared to youth who never drank, suggesting that drinkers were less clear or certain about their sense of self-definition. Nineteen percent of the sample reported ever drinking, however, among those youth who had a 'drinking possible self' available in memory (approximately 1 in 5 youth), a much larger proportion (40%) reported ever drinking. In the one year follow up sample, 36% reported ever drinking, but among those youth who had a 'drinking possible self' available in memory, a much larger proportion (71%) reported ever drinking. Longitudinal relationships in the follow up sample ( $n=28$ ) suggest that ever drinking at baseline is numerically though not statistically associated with a 'drinking possible self' one year later. Because both drinking and availability in memory of a 'drinking possible self' are low frequency descriptors, this may be clinically significant. Given that the majority of those who reported ever drinking said that they did so with parental awareness, this pattern of findings raises interesting questions about whether any alcohol use, i.e., with or without parental awareness, may contribute to the formation of a conception of the self related to drinking.

The findings of this study should be interpreted in light of the following limitations. First, the sample size of 79 was small which limited our ability to examine interactions between known precursors for alcohol problems and self-cognitions as predictors of drinking. Second, although we were able to locate 28 youth for a one-year follow-up, this sample size severely limited power to detect effects of self-cognitions on drinking. Third, the 'drinking possible self' measure was a single item measure that was dichotomized to reflect presence or absence of a 'drinking possible self.' An earlier study, however, using the identical item as an indicator of the 'drinking possible self' showed that availability in memory of a 'drinking possible self' predicted alcohol misuse one year later in adolescent girls, controlling for the effects of alcohol misuse at baseline (Corte & Stein, 2005). Fourth, given that all variables were measured with self-report, it is possible that social desirability could be an alternative explanation of the results. We do not believe, however, this is a likely explanation of the findings given the wide range of scores for two of the variables that might call for a socially desirable response—antisocial behaviors and worries or concerns about a parent's alcohol use. The other two variables that might call for a socially desirable response—'likely to drink too much in the future' and 'ever drink' were endorsed by 19% of the sample, which is consistent with previous results in other samples of youth in this age range.

To our knowledge this was the first theoretically based study to examine relationships between self-structure and known precursors for alcohol problems in preadolescents prior to regular alcohol use. This study raises interesting questions about the potential role of a 'drinking possible self' in early alcohol use, as well as potential factors that contribute to development of a 'drinking possible self.' Larger longitudinal studies are needed to further explicate these

relationships. Because the self is modifiable (Jacobs et al., 2003), it may be a viable target of interventions aimed at preventing early drinking onset.

## Acknowledgments

The authors gratefully acknowledge support from the UIC College of Nursing, Midwest Nursing Research Society, NIH, NINR, Center for Reducing Risks in Vulnerable Populations, P30 NRO9014, UIC Building Interdisciplinary Research Careers in Women's Health, NIH, NICHD, K12 HD055892-01, and Mary Becherer and Danielle Ramirez for assistance with data collection.

## References

- American Psychiatric Association. Diagnostic and statistical manual of mental disorders text revision. 4. Washington D.C: 2000.
- Andersen SM, Chen S. The relational self: An interpersonal social-cognitive theory. *Psychological Review* 2002;109(4):619–645. [PubMed: 12374322]
- Andersen BL, Cyranowski JM. Women's sexual self-schema. *Journal of Personality & Social Psychology* 1994;67(6):1079–1100.
- Andersen BL, Cyranowski JM. Women's sexuality: Behaviors, responses, and individual differences. *Journal of Consulting & Clinical Psychology* 1995;63(6):891–906. [PubMed: 8543712]
- Campanelli P, Dielman T, Shope J. Validity of adolescents' self-reports of alcohol use and misuse using a bogus pipeline procedure. *Adolescence* 1987;22:7–22. [PubMed: 3591505]
- Campbell, JD.; Assanand, S.; DiPauls, A. Structural features of the self-concept and adjustment. In: Tesser, A.; Felson, RB.; Suls, JM., editors. *Psychological perspectives on self and identity*. Washington D.C: American Psychological Association; 2000. p. 67-87.
- Clark DB, Cornelius JR, Kirisci L, Tarter RE. Childhood risk categories for adolescent substance involvement: A general liability typology. *Drug and Alcohol Dependence* 2005;77(1):13–21.10.1016/j.drugalcdep.2004.06.008 [PubMed: 15607837]
- Corte, C.; Stein, KF. Drinking-related possible self as a prospective predictor of alcohol misuse in early adolescent girls. Poster presented at the 28th Annual Meeting of the Research Society on Alcoholism; Santa Barbara, CA. 2005 Jun.
- Corte C, Stein KF. Self-cognitions in antisocial alcohol dependence and recovery. *Western Journal of Nursing Research* 2007;29:80–99. [PubMed: 17228062]
- Corte, C. Drinking possible self: Relationship with alcohol expectancies in low-income urban preadolescent youth. Poster presented at the 29th Annual Meeting of the Research Society on Alcoholism; Chicago, IL. 2007 Jun.
- Corte C, Stein KF. Self-concept disturbances: Cognitive vulnerability for early drinking and early drunkenness in adolescents at high risk for alcohol problems. *Addictive Behaviors* 2008;33:1282–1290. [PubMed: 18602220]
- Corte C. Schema model of the self-concept to examine the role of the self-concept in alcohol dependence and recovery. *Journal of the American Psychiatric Nurses Association* 2007;13(1):31–41.10.1177/1078390307301738
- Cross SE, Markus HR. Self-schemas, possible selves, and competent performance. *Journal of Educational Psychology* 1994;86(3):423–438.
- Eccles JS, Barber B. Student council, volunteering, basketball, or marching band: What kind of extracurricular involvement matters? *Journal of Adolescent Research* 1999;14(1):10–43.
- Estabrooks P, Courneya KS. Relationships among self-schema, intention, and exercise behavior. *Journal of Sport & Exercise Psychology* 1997;19(2):156–168.
- Fothergill KE, Ensminger ME. Childhood and adolescent antecedents of drug and alcohol problems: A longitudinal study. *Drug & Alcohol Dependence* 2006;82(1):61–76. [PubMed: 16150555]
- Freeman MA, Hennessy EV, Marzullo DM. Defensive evaluation of antismoking messages among college-age smokers: The role of possible selves. *Health Psychology* 2001;20(6):424–433. [PubMed: 11714184]

- Froming WJ, Nasby W, McManus J. Prosocial self-schemas, self-awareness, and children's prosocial behavior. *Journal of Personality & Social Psychology* 1998;75(3):766-777. [PubMed: 9781410]
- Grant BF, Dawson DA. Age at onset of alcohol use and its association with DSM-IV alcohol abuse and dependence: Results from the national longitudinal alcohol epidemiologic survey. *Journal of Substance Abuse* 1997;9:103-110. [PubMed: 9494942]
- Harter, S. *Manual for the harter self-perception profile for adolescents*. Denver, Co: University of Colorado; 1985.
- Havey JM, Dodd DK. Classifying COAs with three variations of the CAST: Classification rates, stability, and gender differences. *Addictive Behaviors* 1995;20(4):501-507. [PubMed: 7484331]
- Hicks J. Cognitive availability of ideal self-images and alcohol use. 2007 [unpublished raw data].
- Hodgins DC, MatickaTyndale E, ElGuebaly N, West M. The CAST-6: Development of a short-form of the children of alcoholics screening test. *Addictive Behaviors* 1993;18(3):337-345. [PubMed: 8342446]
- Hoyle RH. Personality and self-regulation: Trait and information-processing perspectives. *Journal of Personality* 2006;74(6):1507-1525.10.1111/j.1467-6494.2006.00418.x [PubMed: 17083656]
- Jacobs JE, Bleeker MM, Constantino MJ. The self-system during childhood and adolescence: Development, influences, and implications. *Journal of Psychotherapy Integration* 2003;13(1):33-65.
- Kemmelmeyer M, Oyserman D. Gendered influence of downward social comparisons on current and possible selves. *Journal of Social Issues. Special Issue: Stigma: An Insider's Perspective* 2001;57(1):129-148.10.1111/0022-4537.00205
- Kendzierski D. Self-schemata and exercise. *Basic & Applied Social Psychology* 1988;9(1):45-59.
- Kendzierski D, Whitaker DJ. The role of self-schema in linking intentions with behavior. *Personality & Social Psychology Bulletin* 1997;23(2):139-147.
- King LA, Raspin C. Lost and found possible selves, subjective well-being, and ego development in divorced women. *Journal of Personality* 2004;72(3):603-632. [PubMed: 15102040]
- King LA, Smith NG. Gay and straight possible selves: Goals, identity, subjective well-being, and personality development. *Journal of Personality* 2004;72(5):967-994. [PubMed: 15335334]
- Kost KA, Smyth NJ. Two strikes against them? exploring the influence of a history of poverty and growing up in an alcoholic family on alcohol problems and income. *Journal of Social Service Research* 2002;28(4):23-52.
- Levy S, Sherritt L, Harris SK, Gates EC, Holder DW, Kulig JW, et al. Test-retest reliability of adolescents' self-report of substance use. *Alcoholism: Clinical & Experimental Research* 2004;28(8):1236-1241.
- Lieberman MD, Jarcho JM, Satpute AB. Evidence-based and intuition-based self-knowledge: An fMRI study. *Journal of Personality & Social Psychology* 2004;87(4):421-435. [PubMed: 15491269]
- Lips HM. The gender gap in possible selves: Divergence of academic self-views among high school and university students. *Sex Roles* 2004;50(5):357-371.
- Macrae CN, Moran JM, Heatherton TF, Banfield JF, Kelley WM. Medial prefrontal activity predicts memory for self. *Cerebral Cortex* 2004;14(6):647-654. [PubMed: 15084488]
- Markus H. Self-schemata and processing information about the self. *Journal of Personality and Social Psychology* 1977;35(2):63-78.
- Markus, H.; Ruvolo, A. *Goal concepts in personality and social psychology*. Hillsdale, NJ, England: Lawrence Erlbaum Associates, Inc; 1989. Possible selves: Personalized representations of goals; p. 221-241.
- Markus H, Hamill R, Sentis KP. Thinking fat: Self-schemas for body weight and the processing of weight relevant information. *Journal of Applied Social Psychology* 1987;17(1):50-71.
- Markus, H.; Nurius, P. Possible selves: The interface between motivation and the self-concept. In: Yardley, K.; Honess, T., editors. *Self and identity: Psychological perspectives*. Oxford, England: John Wiley & Sons; 1987. p. 157-172.
- Markus H, Wurf E. The dynamic self-concept: A social psychological perspective. *Annual Review of Sociology* 1987;38:299-337.
- National Institute on Alcohol Abuse and Alcoholism. Underage drinking research initiative. 2008. Retrieved 2/4/08, from <http://www.surgeongeneral.gov/topics/underagedrinking/goals.html>

- Oyserman, D.; Fryberg, S. The possible selves of diverse adolescents: Content and function across gender, race and national origin. Hauppauge, NY, US: Nova Science Publishers; 2006.
- Oyserman D, Bybee D, Terry K, Hart-Johnson T. Possible selves as roadmaps. *Journal of Research in Personality* 2004;38(2):130–149.
- Oyserman, D.; James, L. Possible selves: From content to process. In: Markman; Klein; Suhr, editors. *The handbook of imagination and mental simulation*. Psychology Press; (in press)
- Pizzolato JE. Achieving college student possible selves: Navigating the space between commitment and achievement of long-term identity goals. *Cultural Diversity & Ethnic Minority Psychology* 2006;12(1):57–69. [PubMed: 16594855]
- Poulton R, Caspi A, Milne BJ, Thomson WM, Taylor A, Sears MR, et al. Association between children's experience of socioeconomic disadvantage and adult health: A life-course study. *Lancet* 2002;360(9346):1640–1645. [PubMed: 12457787]
- Quinlan SL, Jaccard J, Blanton H. A decision theoretic and prototype conceptualization of possible selves: Implications for the prediction of risk behavior. *Journal of Personality* 2006;74(2):599–630. [PubMed: 16529588]
- Roeser RW, Galloway M, Casey-Cannon S, Watson C, Keller L, Tan E. Identity representations in patterns of school achievement and well-being among early adolescent girls: Variable- and person-centered approaches. *The Journal of Early Adolescence* 2008;28(1):115–152.10.1177/0272431607308676
- Schwartz SJ. The evolution of Eriksonian and neo-Eriksonian identity theory and research: A review and integration. *Identity* 2001;1(1):7–58.10.1207/S1532706XSCHWARTZ
- Sedikides C, Skowronski JJ. The symbolic self in evolutionary context. *Personality and Social Psychology Review* 1997;1(1):80–102. [PubMed: 15647130]
- Shapka JD, Keating DP. Structure and change in self-concept during adolescence. *Canadian Journal of Behavioural Science/Revue Canadienne Des Sciences Du Comportement* 2005;37(2):83–96.10.1037/h0087247
- Shope JT, Copeland L, Dielman T. Measurement of alcohol use and misuse in a cohort of studies followed from grade 6 through grade 12. *Alcoholism: Clinical & Experimental Research* 1994;18:726–733.
- Stein KF, Corte C. Identity impairment and the eating disorders: Content and organization of the self-concept in women with anorexia nervosa and bulimia nervosa. *European Eating Disorders Review* 2007;15:58–69. [PubMed: 17676674]
- Stein KF, Corte C. The identity impairment model: A longitudinal studies of self-schemas as predictors of disordered eating behaviors. *Nursing Research* 2008;57:182–190. [PubMed: 18496104]
- Stein KF, Roeser R, Markus HR. Self-schemas and possible selves as predictors and outcomes of risky behaviors in adolescents. *Nursing Research* 1998;47(2):96–106. [PubMed: 9536193]
- U.S. Department of Health and Human Services. The surgeon general's call to action to prevent and reduce underage drinking. 2007. Retrieved 2/4/08 from <http://www.surgeongeneral.gov/topics/underagedrinking/goals.html>
- Wills TA, Cleary SD. The validity of self-reports of smoking: Analyses by race/ethnicity in a school sample of urban adolescents. *American Journal of Public Health* 1997;87(1):56–61. [PubMed: 9065227]
- Zucker, RA.; Fitzgerald, HE. The antisocial behavior checklist (version 2). Department of Psychiatry and Alcohol Research Center, University of Michigan; 1996.
- Zucker RA, Fitzgerald H, Refior S, Puttler L, Pallas D, Ellis D. The clinical and social ecology of childhood for children of alcoholics: Description of a study and implications for a differentiated social policy. *Children of Addiction: Research, Health, and Policies* 2000:109–141.
- Zucker RA, Kincaid SB, Fitzgerald HE, Bingham CR. Alcohol schema acquisition in preschoolers: Differences between children of alcoholics and children of nonalcoholics. *Alcoholism: Clinical & Experimental Research* 1995;19(4):1011–1017.

**Table 1**

Descriptive statistics for all variables for the entire sample (N = 79).

	Mean (SD) or % (n)	Range
Antisociality ( <i>ASB-Youth</i> score)	4.5 (5.1)	0–24
Parental Alcohol Problems ( <i>CAST-6</i> score)	1.6 (2.0)	0–6
#Positive Self-Schemas	13.1 (6.8)	0–29
#Negative Self-Schemas	5.2 (4.4)	0–16
'Drinking Possible Self' (% yes)	19% (n = 15)	--
Ever Drink? (% yes)	19% (n = 15)	--

**Table 2**

Correlations between Self-Cognitions and Known Precursors for Alcohol Problems

	<i>CAST-6 score</i>	<i>ASB-Youth score</i>
# Positive Self-Schemas	-.38***	-.10
# Negative Self-Schemas	.37***	.01
'Drinking Possible Self' (0=no, 1=yes)	.25*	.28**

Note. *CAST-6 score* = *Children of Alcoholics Screening Test* sum score; *ASB-Youth score*= *Antisocial Behavior Checklist for Youth* score

\*  
 $p < .05$ ;

\*\*  
 $p < .01$ ;

\*\*\*  
 $p < .001$